Chlorine & Chloramines

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Chlorine & Chloramines

- Kill harmful microorganisms
- Excessive levels can cause eye/nose irritation, stomach discomfort, and anemia
- React with Natural Organic Matter (NOM) to form harmful DBPs



MRDLs

Chlorine & Chloramines MRDLs = 4.0 mg/L

- Applies to all CWSs and NTNCWSs that add chlorine or chloramines
- MRDLs are like an MCL but for disinfectants
- · Ensures adequate disinfection
- Flexible keeps disinfectant levels low enough to minimize DBP formation and limit health effects

Monitoring

- Chlorine and chloramines monitoring based on monitoring for the Total Coliform Rule (TCR):
 - Frequency based on population served
 - Occurs at same locations as TCR sampling in distribution system

TCR Monitoring Schedule*

Number of Monthly Samples	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

* See rule for larger population categories

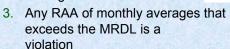
Monitoring

- Systems must monitor for chlorine and chloramines every time they sample for total coliform
 - Includes repeat total coliform monitoring
 - Includes reduced TCR monitoring
 - Must be taken at same location as TCR samples

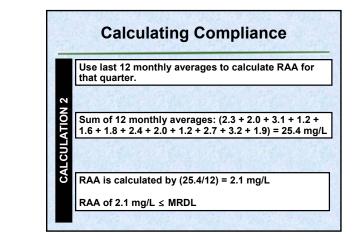
1 TCR sample = 1 chlorine or chloramines sample

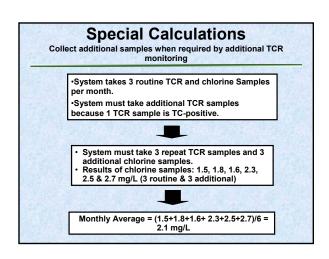
Calculating Compliance

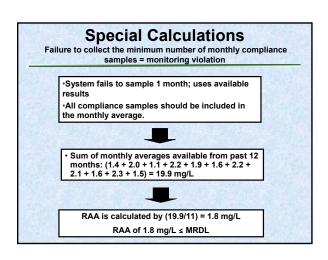
- Calculated each quarter using monthly averages
- Based on Running Annual Average (RAA) of monthly averages



Calculating Compliance Calculating Monthly averages Example: System serves 2,785 people Samples 3 times per month Results for 1 month: 2.1, 3.2 & 1.5 mg/L Sum = (2.1+3.2+1.5) = 6.8 mg/L Monthly Average = 6.8/3 = 2.3 mg/L







Returning to Compliance

Options for systems with compliance problems:

- Best Available Technology (BAT)
- Source water changes
- Partnership with other system(s)

